

Meteor stream resonances – the basic idea

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IMC 2007

Tuesday, June 12

Auditorium conference room

Session 2: Meteor showers' activity and forecasting

Morning session

Session chairs: D. Asher and A. Christou

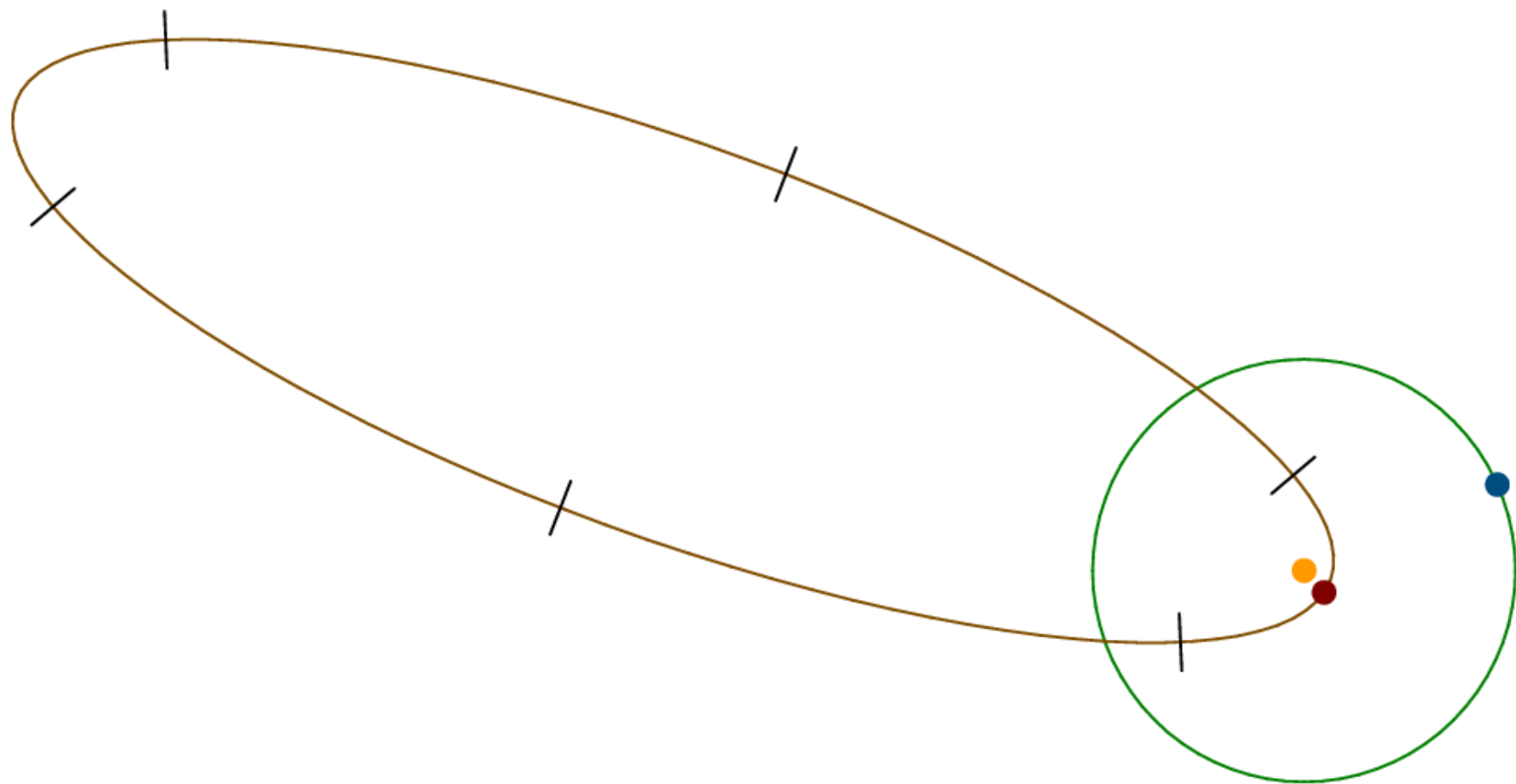
9h30-10h00	Junichi Watanabe (National Astronomical Observatory of Japan) "Activities of parent comets and related meteor showers" (invited)
10h00-10h15	Jurgen Rendtel (International Meteor Organization, Germany) "The Orionid meteor shower observed over 60 years"
10h15-10h30	Mikiya Sato and Junichi Watanabe (National Astronomical Observatory of Japan) "Origin of the outburst of Orionids 2006"

Orionids in the 1:6 resonance

$$\sigma = 6M - \lambda_J + \omega + \Omega$$

$\lambda_J \equiv$ mean longitude of Jupiter

For resonant meteoroids, σ is constant,
or oscillates about an average value



Observed fireball outburst

Comet



No. of particles

30

20

10

0

180

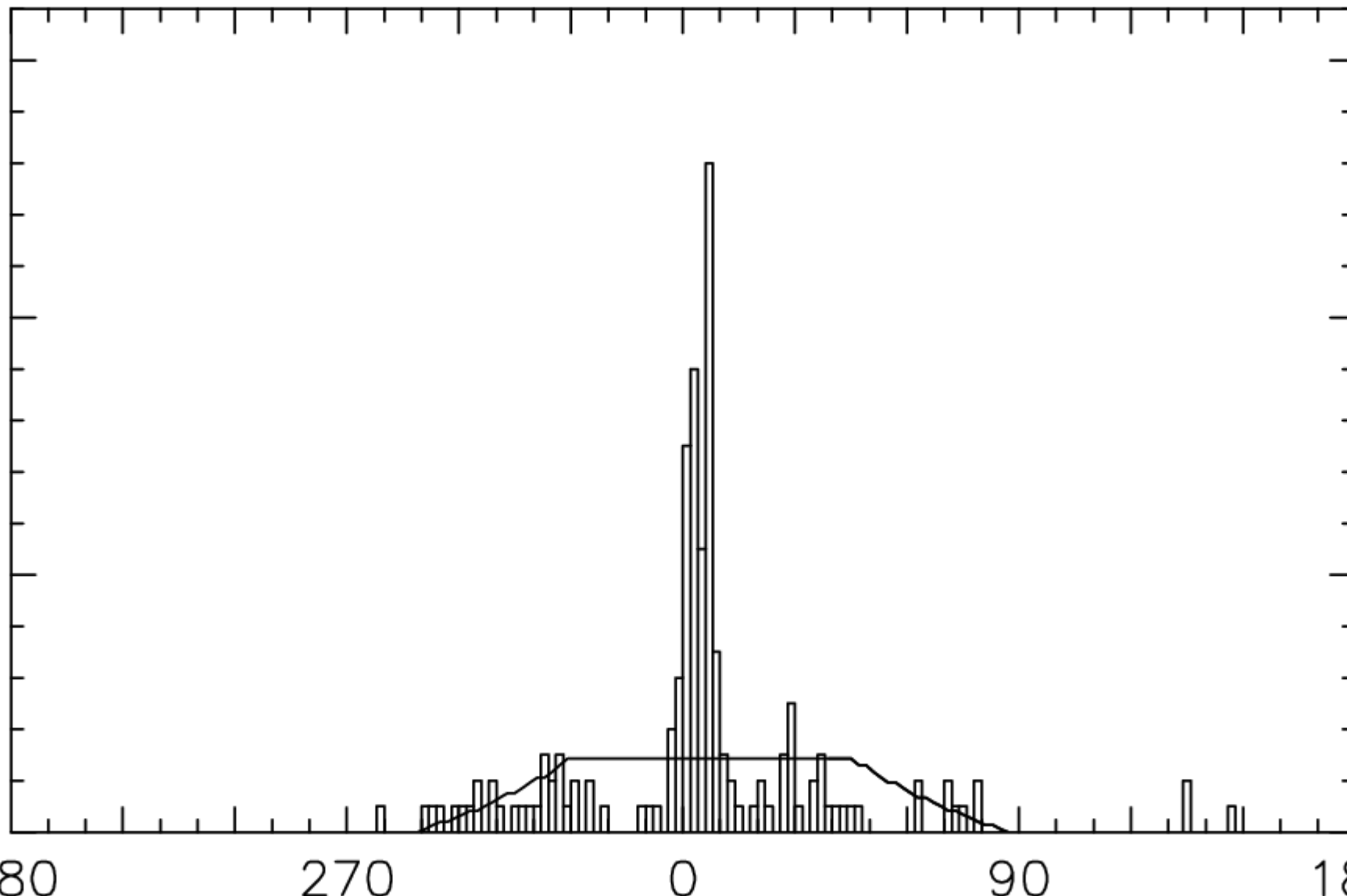
270

0

90

180

M



Emel'yanenko & Bailey 1996

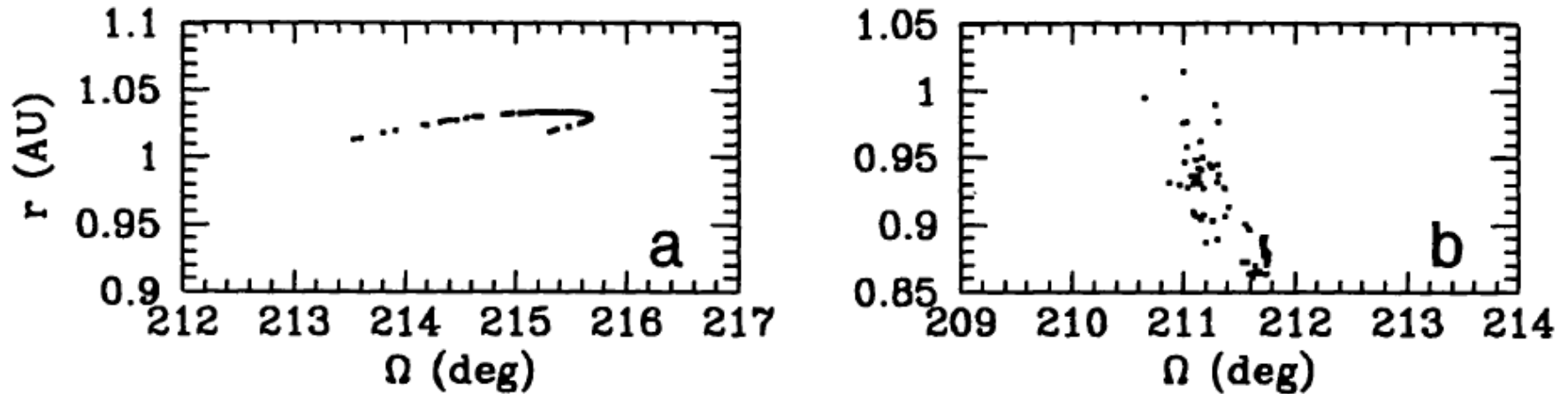
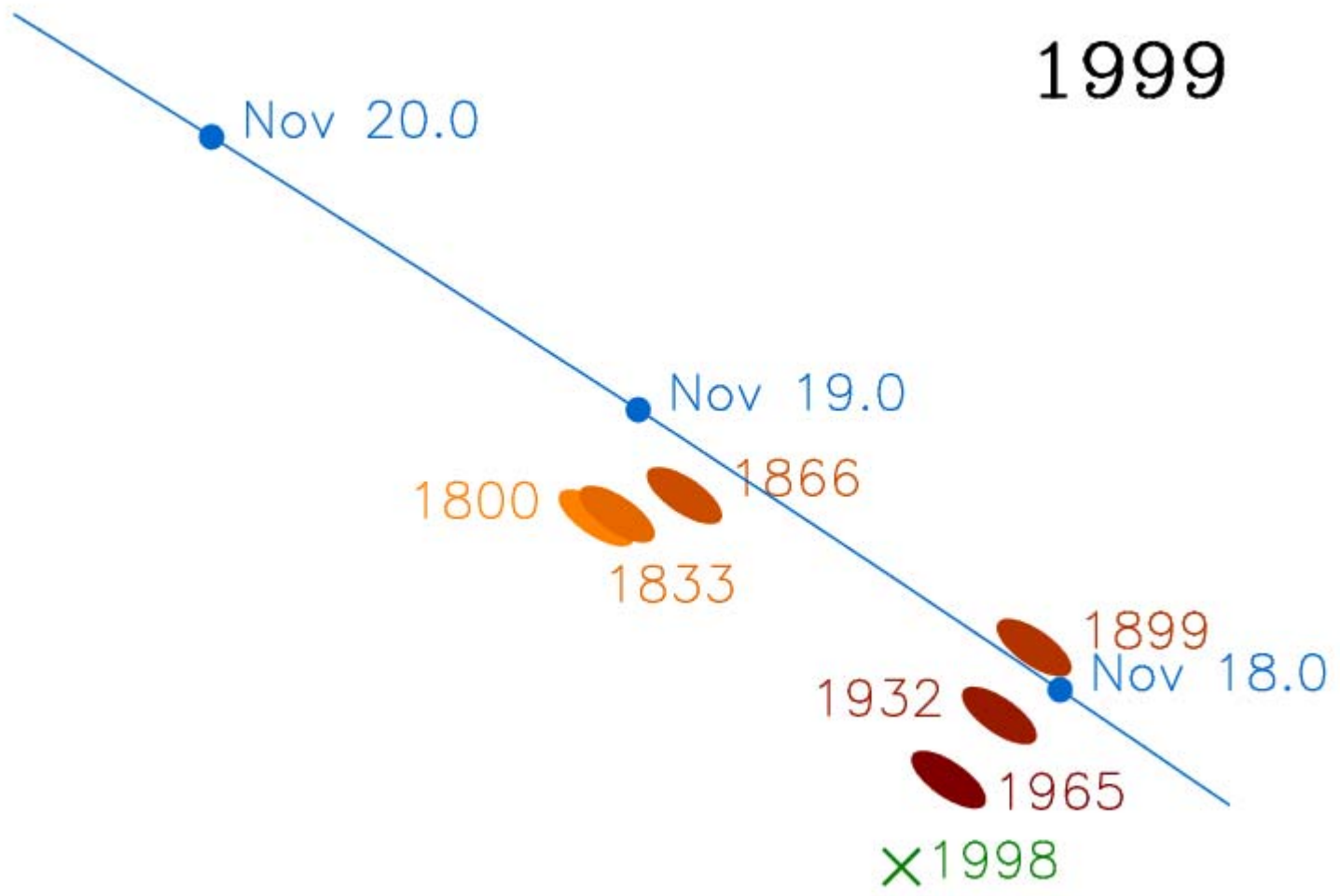


Figure 3. Ecliptic-plane crossings for meteoroids with initial orbits close to that of the Lyrids. Note the extreme concentration of particles in the librating model (a).



$$\Delta a_0 = 0.14$$

$$\beta = 0.0005$$

$$\nu = -113 \text{ to } 113$$

$$\text{sunward } \langle v_{ej} \rangle = 35/r$$

